

**ABSTRACT**

The present invention is of system, device, and method for detection, localization, and characterization of plaque-induced stenosis of a blood vessel. More particularly, the present invention relates to a balloon catheter having an expandable balloon insertable into a blood vessel, which balloon comprises a plurality of pressure sensors operable to detect stenosis of the vessel, and further operable to report degrees of compressibility of stenotic regions of plaque within the vessel, thereby distinguishing between standard and vulnerable plaque.